

SAFETY DATA SHEET

pursuant to EU Regulation 830/2015

Ed. 4
8 January 2020

1. Identification of the substance/mixture and of the company

1.1 Product Identifier

Trade name: **STARTIN S**

CAS Number 1118-46-3 butyltin trichloride

EEC-No 214-263-6

Acronym that can be used on the safety data sheet: MBTC (monobutyltin trichloride)

1.2 Relevant identified uses and uses advised against

Protective agent for hot-dip coating of glass.

Discouraged uses: restriction pursuant to Reg. 1907/2006 (REACH), annex XVII, item no. 20 "organostannic compounds" - see § 16 for the full description of the restrictions.

Do not use for personal purposes.

1.3 Details of the supplier of the safety data sheet

Product marketed by: **BOHEMI CHEMICALS srl** – via G. Deledda 39 – 20080 Zibido S. Giacomo (MI) – ITALY

E-Mail bohemi@bohemicchemicals.com

1.4 Emergency telephone numbers:

Bohemi Chemicals - Office - tel. Mo – Fr h. 9-16 CET +390290005047

Poison Control Centre – Centro Antiveleni Niguarda Milan – tel. +390266101029

2. Hazards identification

2.1 Classification of the substance

Classification pursuant to EC Reg. 1272/2008 (CLP Reg.):

Skin Corr. 1C H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H 318 Causes serious eye damage

STOT SE 3 H335 May cause respiratory irritation

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects

2.2 Label elements

Hazard Pictogram(s):



GHS 05 GHS 07 GHS 08 GHS 09

Signal word: **HAZARD**

Hazard Statements:

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H360 May damage fertility or the unborn child

H410 Very toxic to aquatic life with long lasting effects

Additional hazard statements:

EUH071: Corrosive to the respiratory tract

Precautionary Statements:

P260 Do not breathe dust/mist.

P273 Avoid release to the environment.

P280 Wear personal protective gloves/clothing. Wear eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician

P403+P233 Store in a well ventilated place. Keep container tightly closed.

P501 Product/ container must be disposed of in accordance with local/ regional/ national and international regulations.

2.3 Other hazards

When used in combination with other products, take into consideration its chemical nature and the possible hazardous interactions.

It may react dangerously with strong oxidants, organic peroxides and self-reactive substances.

PBT and vPvB assessment results

PBT: not applicable

vPvB: not applicable

3. Composition/information on ingredients

The product consists almost exclusively of monobutyltin trichloride, with the presence of dibutyltin dichloride as an impurity.

Component	Concentration (%)	No. of CAS	CE No.	Classification pursuant to EC Reg. No. 1272/2008 (CLP)
Butyltin trichloride Reg. No. 01-2119484854-24-xxxx	≈ 100%	1118-46-3	214-263-6	Skin Corr. 1C; Eye Dam. 1; Acute Tox. 4; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1
Dibutyltin dichloride Reg. No. 01-2119496066-31-xxxx	< 0.1%	683-18-1	211-670-0	Skin Corr. 1B; Acute Tox. 3; Acute Tox. 2; Muta. 2; Repr. 1B; STOT RE 1; Aquatic Acute 1; Aquatic Chronic 1

4. First aid measures

4.1 Description of the first aid measures

General data: Immediately take off all contaminated garments.

- **Inhalation:** Bring the subject to a well ventilated area and, if he/she feels unwell, consult a doctor.
- **Skin contact:** Instantly wash with water and soap and rinse thoroughly.
- **Eye contact:** Wash immediately and abundantly with running water, with eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. Protect the unaffected eye. Call a doctor immediately.
- **Ingestion:** Drink plenty of water and stay in a well ventilated area. Do not induce vomiting. Seek medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

The liquid is prone to hydrolysis (probably slowly) with formation of hydrochloric acid and therefore may cause severe topical irritation, whose latency period may vary considerably. Poisoning symptoms may appear after many hours so medical surveillance is necessary in the 48 hours following the incident.

Since bioavailability is less and protracted compared to other di- and tri-butyltin derivatives, the systemic action is less.

Eyes: from strong irritation to chemical burns of the mucous membranes (possible even after latency). Possible serious eye damage following eye contact (especially if the washing and rinsing after contact are not done right away) must be monitored immediately and treated as soon as possible under the supervision of an ophthalmologist.

Skin: possible strong irritation only after long contact of undetected or ignored amounts (e.g. contaminated work clothes not removed)

Inhalation: possible strong irritation of the mucous membranes, cough, dyspnoea, respiratory tract inflammation, up to pulmonary oedema.

Ingestion: strong irritation of the mucous membranes.

4.3 Indication of any immediate medical attention and special treatment needed
Medical intervention is necessary both in the case of inhalation and of skin or eye contact, as well as in the case of ingestion of the product.

5. Fire fighting measures

5.1 Extinguishing media:

Suitable extinguishing media: CO₂, fire-extinguishing powder or water spray. Fire Class B: liquid substances or fluxes.

Extinguishing media unsuitable for safety reasons: none in particular.

5.2 Special hazards deriving from the mixture

The following may be released in case of fire:

- hydrochloric acid (HCl)
- Chlorine (Cl₂)
- Carbon monoxide (CO) and carbon dioxide (CO₂)

5.3 Recommendations for fire extinguishing personnel

Specific protective equipment: Wear a self-contained breathing device and properly closed protective clothing, without openings.

Further information: Cool at-risk containers with a jet of water. Dispose of fire residues and the contaminated water used to put the fire out in accordance with the laws.

6. Accidental release measures

6.1 Personal precautions, protection devices and emergency procedures

Wear coveralls or protective clothing. Move unequipped people away.
Move flammable sources away.

6.2 Environmental precautions:

Do not allow product to reach sewage system, surface or underground waters.
Inform relevant authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up

Collect liquid with absorbent material (sepiolite, universal powdered adsorbent), then remove with mechanical means.

Do not use sand or sawdust to collect it.

Dispose of the collected material as provided by law.

6.4 Reference to other sections of the safety data sheet

- ⇒ See Section 7 for information on safe handling.
- ⇒ See Section 8 for information on personal protection equipment.
- ⇒ See Section 13 for disposal information.

7. Handling and storage

7.1 Precautions for safe handling

Workplace should be equipped with suitable ventilation/ suction system.
There should be no spilled liquids on the floor.
The work environment must have a clearly indicated eye wash shower.
A shower must be taken after handling large amounts of the product.

In case of fire or explosion: At the present state of the art, there is no precise information on the burning behaviour of the product.

Lines and electric contacts should be checked on a regular basis given the fact that the risk that they can be corroded by the product is high.

7.2 Safe storage conditions, including possible incompatibilities

Storage: the product belongs to storage class 8B (noncombustible corrosive substances).

Only substances of the same class should be stored together.

Storage with the following products is forbidden: pharmaceutical products - food - animal feedstuffs - additives for food and animal feedstuffs - infectious substances - radioactive substances - explosive substances - aerosols (bottles and spray cans) - strongly oxidising substances of storage class 5.1 A - substances subject to spontaneous ignition - organic peroxides and self-reactive substances.

Storage with the following products is only allowed under certain conditions and must be carefully evaluated: flammable liquids and solids - substances that release flammable gases in contact with water - explosives of storage class 4.1 A - pyrophoric substances - ammonium nitrate and preparations containing it.

The product should not be stored with substances that - due to interactions - may generate hazardous chemical reactions.

Requirements for storage rooms and containers: at present there is no precise information on the burning behaviour of the product, therefore the normal constructive precautions for storage rooms apply. Inspect lines and electric contacts regularly, checking the points of potential corrosion.

Information about storage in one common storage facility:

Do not store it in contact with food.

Do not store it in contact with flammable substances.

Do not store it in contact with oxidising agents.

Store separately from alkalis.

The product should be stored separately from other combustible substances and substances that are corrosive for the skin, even if the combustible ones are not classified as hazardous (wood, paper, etc.).

Further information on storage conditions:

Store containers in a well ventilated place.

Store in a cool, dry place in well-sealed drums, kept locked or accessible only to competent or authorised persons.

Keep away from heat and direct sunlight.

Protect from contamination.

7.3 Specific end uses:

No additional data available.

8. Exposure controls/ personal protection

8.1 Control parameters

We can refer to the occupational exposure limit values in effect in Germany, which are:

0.0018 ml/m³

0,009 mg/m³

MBTC is used industrially in closed systems in continuous or batch processes, such as to minimise potential occupational exposure. Workers may be exposed during cleaning, maintenance, transfer, sampling and analysis operations. Effective procedures aimed at limiting exposure during normal work activity must be implemented.

The product does not contain significant quantities of substances whose limit values require monitoring at the workplace.

8.2 Exposure controls

General protective and hygiene measures:

Keep away from foodstuffs, beverages and food.

Immediately take off all contaminated garments.

Wash your hands before breaks and at the end of the work.

Protect skin beforehand with specific ointments/creams.

Avoid contact with the eyes and skin.

Eating, drinking, smoking and sniffing tobacco are forbidden during work.

Personal protective equipment.

Respiratory:

In the event of emergency (e.g. inadvertent release of large amounts of substance) a self-contained respirator must be used. At this time there are no specific indications on the filters to insert in the masks; nevertheless it is advisable to insert one that is suitable for preventing the inhalation of inorganic acidic agents.

Safety gloves:

Gloves must be worn to protect the hands. Gloves made of the following materials are suitable (permeation breakthrough time \geq 8h): butyl rubber (butyl - 0.5 mm) - fluorocarbon rubber (FKM - 0.4 mm).

Cloth or leather gloves are completely useless. Latex, nitrile rubber, polychloroprene and PVC do not provide sufficient protection.

Select gloves based on permeation breakthrough times, permeation rates and degradation. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Check for water tightness before each new use of the gloves.

Skin protection creams do not provide sufficient protection.

Glove material

The choice of suitable gloves does not depend simply on the material itself but on the other quality characteristics that vary from one product to another. The stability of the glove materials cannot be calculated in advance and should be tested before use.

Permeation rate of the material of gloves

Permeation breakthrough time: ≥ 8 h

Ask the glove supplier for the specific permeation breakthrough time, which must be strictly observed.

Safety goggles: Watertight safety goggles. If the face is at risk, wear a full face mask.

Body protection: Wear a long, tight-fitting apron or other garment that protects against chemicals and work shoes.

9. Physical and chemical properties

9.1 Information on the basic chemical and physical properties

Appearance: yellowish water soluble liquid, heavier than water

Odour: no particular odour

Melting point: -63°C

Boiling Point: 193°C

Density at 20 °C: 1.69 gr/cm^3

Solubility in water: soluble/miscible

Vapour pressure: 11.1 Pa at 20°C

Decomposition temperature: $> 177^{\circ}\text{C}$

Self-combustion temperature: 560°C

Decomposition products: chlorine, hydrochloric acid, carbon oxides

9.2 Other information

Not available

10. Stability and reactivity

10.1 Reactivity

Reacts with strong oxidants, decomposing and developing hydrochloric acid and toxic gas (chlorine).

10.2 Chemical stability

The product is heat stable. Do not heat so as to prevent thermal decomposition.

10.3 Possibility of hazardous reactions

Besides the reactivity with strong oxidants, no other hazardous chemical reactions are known.

10.4 Conditions to avoid

Heat and electrical contact.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

- Chlorine (Cl₂)
- hydrochloric acid (HCl)

11. Toxicological information

11.1 Information on toxicological effects

Significant toxicological values (LD/LC50)

Oral	LD50	rat	2140 mg/kg
By inhalation	LC50/4h	rat	0.06 mg/l

Due to the impurity of dibutyltin dichloride:

Oral	LD50	rat	219 mg/kg
By inhalation	LC50/4h	rat	0.059 mg/l

GHS Classifications:

Skin corrosion, Category 1C; H314

Serious eye damage, Category 1; H318

Specific Target Organ Toxicity (single exposure), Category 3; H335

Reproductive toxicity 1B; H360

Hazardous to the aquatic environment, Acute Category 1; H400

Hazardous to the aquatic environment, Acute Category 1; H410

12. Ecological information

12.1 Toxicity:

Aquatic toxicity referred to the product as is

EC50/72 or 96 h	algae	0.0000398 mg/l
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Aquatic toxicity referred to dibutyltin dichloride

EC50	daphnia magna	1.4 mg/l
LC50/48h	leuciscus idus melanotus orfe	1 mg/l
LC50/96h	leuciscus idus orfe	>4.8 mg/l

12.2 Persistence and biodegradability

No relevant information available

12.3 Bioaccumulative potential:

No relevant information available

12.4 Mobility in soil:

No relevant information available

12.5 PBT and vPvB assessment results

No relevant information available

12.6 Other adverse effects

Toxic for fish and plankton. Very toxic to aquatic organisms.

Do not put the undiluted or non-neutralised product into wastewater or collection channels.

13. Disposal considerations

13.1 Waste treatment methods

Recommendations: Must be disposed of in accordance with local regulations.

Waste code: based on local / national regulations.

European waste catalogue: assignment of the EWC code depends on the analytical characterisation of the waste.

Handling of small quantities of the product: put it in containers for inorganic residues like those for heavy metal salts and their solutions. The containers must be clearly labeled with a thorough description of the contents. Store them in well ventilated places. Proceed with the analytic classification for assignment of the EWC code and hazard characteristics.

Accidental release measures: evacuate the concerned area. Staff who enter the contaminated area must wear respiratory protection equipment and protect eyes and hands. Clean the area up with care, collect and remove residues. Avoid generation of dust. At the end ventilate the area and wash the place where the leak occurred. The containers must be clearly labeled with a thorough description of the contents. Store them in well ventilated places. Proceed with the analytic classification for assignment of the EWC code and hazard characteristics.

14. Transport information

14.1 UN Number: – 14.2 Proper shipping name - 14.3 Types of hazard related to transport - 14.4 Packing group - 14.5 Environmental hazards- 14.6 Special precautions for users



UN Number: 3265

Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC n.o.s. (monobutyltin trichloride)

ADR/RID Class: 8 corrosive substances

Packing group: II

Tunnel code: (E)

Road and railway transport (ADR/RID)	Sea transport IMDG	Air transport IATA-DGR
ADR/RID Class: 8 UN Number: 3265 Packing group: II Classification code: C3 Label: No. 8 Stamp: Dangerous for the environment	IMO-IMDG class: 8 UN Number: 3265 Packing group: II Label: No. 8 EMS code: F-A, S-B Marine pollutant	ICAO-IATA Class: 8 UN Number: 3265 Packing group: II Label: No. 8

Technical name: monobutyltin trichloride

Other ADR information:

- ✓ Excepted quantities (EQ): E2
- ✓ Limited quantities (LQ): 1 L
- ✓ Transportation category: 3
- ✓ Kemler Number: 80
- ✓ Tunnel restriction code: E

14.6 Special precautions for users

Several precautions adoptable for the handling, storage, individual protection and disposal of the product are reported in sections 4, 5, 6, 7, 8, 10 and 13 of the safety data sheet.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC code

Not applicable

15. Information on Regulations

15.1 Safety, health and environmental regulations/legislation specific for the mixture

National laws and decrees

- Italian Legislative Decree No. 105 of 26 June 2015 "Implementation of Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances"
- Italian Legislative Decree 231/2001, Regulations on the administrative liability of legal entities, companies and associations, including those without legal personality (administrative liability of legal entities)
- Italian Legislative Decree 152/2006, Norms concerning the environment
- Italian Legislative Decree 81/2008, Health and safety at work
- Italian Legislative Decree no. 35 of 27 January 2010 - Implementation of Directive 2008/68/EC
- Italian Ministerial Decree of 12 January 2017 - Transposition of Commission Directive 2016/2309 of 16 December 2016 adapting for the fourth time the Annexes of Directive 2008/68/EC of the European Parliament and of the Council on the inland transport of dangerous goods to scientific and technical progress.

European Union regulations and directives

- EC Regulation no. 1907/2006 of the European Parliament and of the Council of 18 December 2006 on the registration, evaluation, authorisation and restriction of chemical substances (REACH) as amended
- EC Regulation no. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on the classification, labeling and packaging of substances and mixtures (CLP) as amended
- Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of hazardous goods
- Commission Regulation (EU) no. 453/2010 of 20 May 2010 amending regulation (EC) no. 1907/2006 of the European Parliament and of the Council on the registration, evaluation, authorisation and restriction of chemical substances (REACH)
- Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances
- Commission Regulation (EU) no. 2015/830 of 28 May 2015 amending regulation (EC) no. 1907/2006 of the European Parliament and of the Council on the registration, evaluation, authorisation and restriction of chemical substances (REACH)

International agreements concerning the transport of dangerous substances

- ADR agreement Ed. 2019
- IATA Dangerous Goods Regulations – 61th edition – 2020
- International Maritime Dangerous Goods Code (2018 edition incorporating amendment 39- 2018)
- IMDG Code Supplement (2018 Edition)

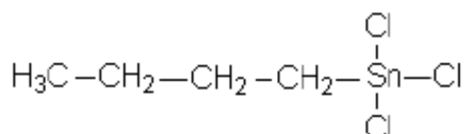
15.2 Chemical Safety Assessment

Not performed.

16. Other information

Chemical formula and molecular weight of the main substance or component of the mixture

C₄H₉Cl₃Sn



Molecular weight: 281.17 g/mol

Signs to be posted in the workplace and regarding product use



No smoking



Attention: Corrosive



Mandatory eye protection



Mandatory protective gloves

Water hazard class (WGK – GERMANY)

WGK 1 – Slightly hazardous to water

Classification in accordance with VwVwS (Verwaltungsvorschrift wassergefährdende Stoffe)
– – Classification in accordance with annex 3 of the administrative regulation of substances hazardous to water.

Restrictions of use pursuant to Annex XVII of EC Reg. 1907/2006 (REACH):

Organostannic compounds:

1. They shall not be placed on the market for use as substances and constituents of preparations when acting as biocides in free association paint.
2. They shall not be placed on the market or used as substances and constituents of preparations which act as biocides to prevent the fouling by micro-organisms, plants or animals of:
 - a) all craft irrespective of their length intended for use in marine, coastal, estuarine and inland waterways and lakes;
 - b) cages, floats, nets and any other appliances or equipment used for fish or shellfish farming;
 - c) any totally or partly submerged appliance or equipment.
3. They shall not be used as substances and constituents of preparations intended for use in the treatment of industrial waters.

Seveso III Directive

Substance: **monobutyltin trichloride**

Annex I - part 1, section E1 – Hazardous to the aquatic environment, acute toxicity category 1 or chronic toxicity category 1

Qualifying quantity (tonnes) of the hazardous substances pursuant to article 3, paragraph 10, for the application

- of lower-tier requirements 100 tons
- of upper-tier requirements: 200 tons

Text of the hazard statements and of the precautionary statements reported in Section 2

Hazard Statements:

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H360 May damage fertility or the unborn child

H410 Very toxic to aquatic life with long lasting effects

Additional hazard statements:

EUH071: corrosive to the respiratory tract

Precautionary Statements:

P260 Do not breathe dust/mist.

P273 Avoid release to the environment.

P280 Wear personal protective gloves/clothing. Wear eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P310 Immediately call a POISON CENTER or doctor/physician

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P233 Store in a well ventilated place. Keep container tightly closed.

P501 Product/ container must be disposed of in accordance with local/ regional/ national and international regulations.

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
ASTM: American Society for Testing and Materials, U.S. standardisation body
CAS: Chemical Abstracts Service (division of the American Chemical Society)
CE: European Union
CR: Chloroprene Rubber
EC(0/50/100): Effective Concentration 0/50/100 (Maximum effective concentration for 0/50/100% of individuals)
CLP: Classification, Labelling and Packaging
CMR: Carcinogen – Mutagenic – Toxic for reproduction
CSR: Chemical Safety Report
DMEL: Derived Minimum Effect Level
DNEL: Derived No Effect Level
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
EMS: Emergency Schedule Number (rapid intervention sheets in case of accidental spillage or fire during transport by sea)
FKM: fluorocarbon rubber
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
IATA International Air Transport Association
IC50: Inhibitor Concentration, 50 percent
ICAO: International Civil Aviation Organization
IMDG: International Maritime Code for Dangerous Goods
IMO: International Maritime Organization
LC50: lethal concentration for 50% of tested individuals
LD50: lethal dose for 50% of tested individuals
LOEC: Lowest Observed Effect Concentration
LQ: Limited Quantity
NBR: Nitrile Butadiene Rubber
NOEC: No Observed Effect Concentration
NOEL: No Observed Effect Level (Highest dose at which no effect was observed)
NR: Natural Rubber
UN: United Nations
PBT: Persistent, bioaccumulative and toxic
PVC: polyvinyl chloride
REACH: registration, evaluation, authorisation and restriction of chemicals
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
STEL: Short term exposure limit
STOT SE: Specific Target Organ Toxicity
TLV: Threshold limit value
TWA: Time Weighted Average
EU: European Union
UN: United Nations

vPvB: very Persistent very Bioaccumulative (very persistent and very bioaccumulative substances)

VwVwS: Verwaltungsvorschrift wassergefährdende Stoffe (German authority for the water hazard classification of substances)

Databases used for the compilation of this safety data sheet

- NIOSH - Registry of Toxic Effects of Chemical Substances
- NIOSH IDLHs "Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs)" U.S. Department of Health and Human Service, Cincinnati Mai 1994
- Organisation for Economic Cooperation and Development (OECD) "Screening Information Data Set for High Production Volume Chemicals (SIDS)"
- IUCLID-CD-ROM, Year 2000 edition; European Commission, Joint Research Centre, Institute for Health and Consumer Protection, European Chemicals Bureau; Ispra, Italy
- Toxicological Data, compiled by the National Institute of Health (NIH), USA, selected and distributed by Technical Database Services (TDS), New York, 2009
- Ecotoxicological Data, compiled by the US Environmental Protection Agency (EPA), selected and distributed by Technical Database Services (TDS), New York, 2009
- Hazardous Substances Data Bank (HSDB)
- IFA Gestis database on chemical substances
- TRGS : Technische Regeln für Gefahrstoffe -Technical Rules for Hazardous Substances, defined by The Federal Institute for Occupational Safety and Health, Germany
- GHS-Sicherheitsdatenblatt (GHS Material Safety Data Sheet), Merck
- Heath, A.G. 1978. Influence of Chlorine Form and Ambient Temperature on the Toxicity of Intermittent Chlorination to Freshwater Fish. In: R.L.Jolley, H.Gorchev, and D.H.Hamilton,Jr.(Eds.), Water Chlorination Environ.Impact Health Eff., Ann Arbor Sci.Publ., Ann Arbor, MI 2:123-133
- Roberts, M.H.J. 1978. Effects of Chlorinated Sea Water on Decapod Crustaceans. In: R.L.Jolley, H.Gorchev, and D.H.Hamilton,Jr.(Eds.), Proc.Second Conf.Water Chlorination Environ.Impact and Health Effects, Gatlinburg, TN., Ann Arbor Sci.Publ., Ann Arbor, MI 2:329-339
- Office of Pesticide Programs 2000. Pesticide Ecotoxicity Database (Formerly: Environmental Effects Database (EEDB)). Environmental Fate and Effects Division, U.S.EPA, Washington, D.C.

Changes made in this edition of the safety data sheet

Replaces Ed. 3 of 5 November 2017. Changes made:

- ⇒ § 2.2 Hazard statements: added pictogram GHS 08 – added phrase H 360 – added phrase EUH 071
- ⇒ § 11.1 Added classification GHS "Reproductive toxicity 1B"
- ⇒ § 15.1 Update of the legislative references applicable to the product, in particular with regard to the ADR, IMDG and IATA/DGR regulations relating to the transport of hazardous materials.

The information provided in this Safety Data Sheet is correct to the best of our knowledge of the product at the time of publication. This information is provided for the sole purpose of allowing the use, storage, transport and disposal of the product in the most correct and safe way. This information should not be considered a guarantee or a specification of product quality. It refers solely to the specifically indicated material and is not valid for the same

when used in combination with other materials or in other processes not specifically indicated in the text of the Material Safety Data Sheet.
